SEQUENCE LISTING

<110> Ekwuribe, Nnochiri N.
Radhakrishnan, Balasingam
Price, Christopher H.
Anderson, Wesley R.
Ansari, Aslam M.

<120> Methods Of Altering The Binding Affinity Of A Peptide To Its Receptor

<130> 014811-30.8DV4

<140> 10/716,578
<141> 2003-11-19

<150> 09/134,803
<151> 1998-08-14

<160> 52

<170> PatentIn version 3.3

<210> 1
<211> 6
<212> PRT
<213> artificial sequence

<220>
<223> Synthetic

<220>
<221> MOD_RES
<222> (6)..(6)
<223> Polymer connected to epsilon-amino group

<400> 1

Tyr Gly Gly Phe Met Lys
1 5

<210> 2

<211> 6

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> Polymer connected to alpha-amino group

<220>

<221> MOD_RES

<222> (6)..(6)

<223> Polymer connected to epsilon-amino group

<400> 2

Tyr Gly Gly Phe Met Lys
1 5

<210> 3

<211> 6

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> Polymer connected to alpha-amino group

<400> 3

Tyr Gly Gly Phe Met Lys
1 5

<210> 4

<211> 6

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> ACETYLATION

<220>

<221> MOD_RES

<222> (6)..(6)

<223> AMIDATION

<400> 4

Phe Arg Trp Trp Tyr Lys
1 5

<210> 5

<211> 6

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> ACETYLATION

<220>

<221> MOD_RES

<222> (6)..(6)

<223> AMIDATION

<400> 5

Arg Trp Ile Gly Trp Lys
1 5

<210> 6

<211> 6

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (6)..(6)

<223> AMIDATION

<220>

<221> UNSURE

<222> (6)..(6)

<223> Xaa can be any of the twenty naturally occurring amino acids

<400> 6

Trp Trp Pro Lys His Xaa
1 5

<210> 7

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (4)..(4)

<223> AMIDATION

<220>

<221> UNSURE

<222> (4)..(4)

<223> Xaa is either Lys or Arg

<400> 7

Trp Trp Pro Xaa
1

<210> 8

<211> 6

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (6)..(6)

<223> AMIDATION

<220>

<221> UNSURE

<222> (6)..(6)

<223> Xaa can be any one of the naturally occurring amino acids

<400> 8

Tyr Pro Phe Gly Phe Xaa
1 5

<210> 9

<211> 7

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(5)

<223> Amino acids are in the D-form

<220>

<221> MOD_RES

<222> (6)..(6)

<223> n is 0 or 1

<220>

<221> MOD_RES

<222> (7)..(7)

<223> Xaa is Gly or the D-form of a naturally occurring amino acid

<220>

<221> MOD_RES

<222> (7)..(7)

<223> AMIDATION

<400> 9

Ile Met Ser Trp Trp Gly Xaa
1 5

<210> 10

<211> 6

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(4)

<223> Amino acids are in the D-form

<220>

<221> MOD_RES

<222> (6)..(6)

<223> Xaa is Gly or the D-form of a naturally-occurring amino acid

<220>

<221> MOD_RES

<222> (6)..(6)

<223> AMIDATION

<400> 10

Ile Met Thr Trp Gly Xaa
1 5

<210> 11

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is A1, wherein A1 is the D-form of Nve or Nle

<220>

<221> MOD_RES

<222> (3)..(3)

<223> Xaa is B2, wherein B2 is Gly, Phe, or Trp

<220>

<221> MOD_RES

<222> (4)..(4)

<223> Xaa is C3, wherein C3 is Trp or Nap

<220>

<221> MOD_RES

<222> (4)..(4)

<223> AMIDATION

<400> 11

Tyr Xaa Xaa Xaa
1

<210> 12

<211> 3

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> Tyr has at its N-terminus an Me-x-H-y-N group, wherein x is 0, 1, or 2; and y is 0, 1, or 2, with the proviso that x and y is never greater than

<220>

<221> MOD_RES

<222> (1)..(2)

<223> The amine between the first Tyr and the second Tyr is methylated

<220>

<221> MOD_RES

<222> (3)..(3)

<223> Xaa is Xaa-z, wherein Xaa is Phe, (D)Phe, or NHBzl, and wherein z is 0 or

<220>

<221> MOD_RES

<222> (3)..(3)

<223> AMIDATION

<400> 12

Tyr Tyr Xaa
1

<210> 13

<211> 6

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (4)..(4)

<223> Xaa is D4, wherein D4 is Lys or Arg

<220>

<221> MOD_RES

<222> (5)..(5)

<223> His is His-z, wherein z is 0 or 1

<220>

<221> MOD_RES

<222> (6)..(6)

<223> Xaa is Xaa-z, wherein Xaa is a naturally occurring amino acid and
z is 0 or

<220>

<221> MOD_RES

<222> (6)..(6)

<223> AMIDATION

<400> 13

Trp Trp Pro Xaa His Xaa
1 5

<210> 14

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 14

Tyr Xaa Phe Phe
1

<210> 15

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<220>

<221> MOD_RES

<222> (4)..(4)

<223> AMIDATION

<400> 15

Tyr Xaa Phe Phe
1

<210> 16

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> Tyr is Tyr(N-alpha-Me), i.e. N-alpha-methyltyrosine

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 16

Tyr Xaa Phe Phe
1

<210> 17

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> Tyr is Tyr(N-alpha-Cmp), i.e. N-alpha-cyclopropylmethyltyrosine

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 17

Tyr Xaa Phe Phe
1

<210> 18

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> Tyr is Tyr(N-alpha-Hex), i.e. N-alpha-hexyltyrosine

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 18

Tyr Xaa Phe Phe
1

<210> 19

<211> 4

<212> PRT

<213> artificial sequence

<220>

<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> Tyr is Tyr(N-alpha-Et2), i.e. N-alpha-diethyltyrosine

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 19

Tyr Xaa Phe Phe
1

<210> 20

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> Tyr is Dmt, i.e. 2,6-dimethyltyrosine

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 20

Tyr Xaa Phe Phe

1

<210> 21

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> Tyr is Dmt, i.e. 2,6-dimethyltyrosine

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<220>

<221> MOD_RES

<222> (4)..(4)

<223> AMIDATION

<400> 21

Tyr Xaa Phe Phe
1

<210> 22

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> Tyr is H-Tyr(3-F), i.e. 3-fluorotyrosine

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 22

Tyr Xaa Phe Phe
1

<210> 23

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> Tyr is H-Tyr(3-Cl), i.e. 3-Chlorotyrosine

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 23

Tyr Xaa Phe Phe
1

<210> 24

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> Tyr is H-Tyr(3-Br), i.e. 3-bromotyrosine

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 24

Tyr Xaa Phe Phe
1

<210> 25

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> Tyr is Dmt, i.e. 2,6-dimethyltyrosine

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic-psi-[CH2-], i.e. 3-methyl-1,2,3,4-tetrahydroisoquinoli

n

<220>

<221> MOD_RES

<222> (2)..(3)

<223> nonpeptidyl bond

<400> 25

Tyr Xaa Phe Phe
1

<210> 26

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> Tyr is Dmt, i.e. 2,6-dimethyltyrosine

<220>

<221> MOD_RES

<222> (2)..(3)

<223> nonpeptidyl bond

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic-psi-[CH2-], i.e. 3-methyl-1,2,3,4-tetrahydroisoquinoli
n

<220>

<221> MOD_RES

<222> (4)..(4)

<223> AMIDATION

<400> 26

Tyr Xaa Phe Phe
1

<210> 27

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic-psi-[CH2-], i.e. 3-methyl-1,2,3,4-tetrahydroisoquinoli
n

<220>

<221> MOD_RES

<222> (3)..(3)

<223> Phe is -NCH3]Phe, i.e. N-methylphenylalanine

<400> 27

Tyr Xaa Phe Phe
1

<210> 28

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic-psi-[CH2-], i.e. 3-methyl-1,2,3,4-tetrahydroisoquinoli
n

<220>

<221> MOD_RES

<222> (3)..(3)

<223> Phe is -NH]Hfe, i.e. homophenylalanine

<400> 28

Tyr Xaa Phe Phe
1

<210> 29

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> Tyr is Tyr(NMe), i.e. N-methyltyrosine

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic-psi-[CH2-], i.e. 3-methyl-1,2,3,4-tetrahydroisoquinoli
n

<220>

<221> MOD_RES

<222> (3)..(3)

<223> Phe is -NH]Hfe, i.e. homophenylalanine

<400> 29

Tyr Xaa Phe Phe
1

<210> 30

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<220>

<221> MOD_RES

<222> (3)..(3)

<223> Gly is Phg, i.e. phenylglycine

<400> 30

Tyr Xaa Gly Phe
1

<210> 31

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 31

Tyr Xaa Trp Phe
1

<210> 32

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<220>

<221> MOD_RES

<222> (4)..(4)

<223> AMIDATION

<400> 32

Tyr Xaa Trp Phe
1

<210> 33

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 33

Tyr Xaa His Phe
1

<210> 34

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<220>

<221> MOD_RES

<222> (3)..(3)

<223> Ala is 2-Nal, i.e. 3-(2'-naphthyl)alanine

<400> 34

Tyr Xaa Ala Phe
1

<210> 35

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<220>

<221> MOD_RES

<222> (3)..(3)

<223> Xaa is Atc, i.e. 2-aminotetralin-2-carboxylic acid

<400> 35

Tyr Xaa Xaa Phe
1

<210> 36

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<220>

<221> MOD_RES

<222> (4)..(4)

<223> Phe is Phe(pNO2), i.e. 4-nitrophenylalanine

<400> 36

Tyr Xaa Phe Phe
1

<210> 37

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<220>

<221> MOD_RES

<222> (4)..(4)

<223> Phe is Phe(pNO2), i.e. 4-nitrophenylalanine

<400> 37

Tyr Xaa Trp Phe
1

<210> 38

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<220>

<221> MOD_RES

<222> (4)..(4)

<223> AMIDATION

<400> 38

Tyr Xaa Phe Trp
1

<210> 39

<211> 7

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<220>

<221> MOD_RES

<222> (7)..(7)

<223> AMIDATION

<400> 39

Tyr Xaa Phe Phe Val Val Gly
1 5

<210> 40

<211> 7

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<220>

<221> MOD_RES

<222> (7)..(7)

<223> AMIDATION

<400> 40

Tyr Xaa Phe Phe Tyr Pro Ser
1 5

<210> 41

<211> 7

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<220>

<221> MOD_RES

<222> (7)..(7)

<223> AMIDATION

<400> 41

Tyr Xaa Trp Phe Tyr Pro Ser
1 5

<210> 42

<211> 7

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<220>

<221> MOD_RES

<222> (4)..(4)

<223> Phe is Phe(pNO2), i.e. 4-nitrophenylalanine

<220>

<221> MOD_RES

<222> (7)..(7)

<223> AMIDATION

<400> 42

Tyr Xaa Trp Phe Tyr Pro Ser
1 5

<210> 43

<211> 7

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<220>

<221> MOD_RES

<222> (6)..(6)

<223> Nle

<220>

<221> MOD_RES

<222> (7)..(7)

<223> AMIDATION

<400> 43

Tyr Xaa Phe Phe Leu Leu Asp
1 5

<210> 44

<211> 3

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 44

Tyr Xaa Phe
1

<210> 45

<211> 3

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<220>

<221> MOD_RES

<222> (3)..(3)

<223> AMIDATION

<400> 45

Tyr Xaa Phe
1

<210> 46

<211> 3

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic-psi-[CH2-], i.e. 3-methyl-1,2,3,4-tetrahydroisoquinoli
n

<220>

<221> MOD_RES

<222> (2)..(3)

<223> nonpeptidyl bond

<400> 46

Tyr Xaa Phe

1

<210> 47

<211> 4

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (2)..(2)

<223> Xaa is Tic-psi-[CH2-], i.e. 3-methyl-1,2,3,4-tetrahydroisoquinoli
n

<220>

<221> MOD_RES

<222> (2)..(3)

<223> nonpeptidyl bond

<400> 47

Tyr Xaa Phe Phe
1

<210> 48

<211> 5

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<400> 48

Tyr Gly Gly Phe Met
1 5

<210> 49

<211> 6

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<400> 49

Tyr Gly Gly Phe Met Lys
1 5

<210> 50

<211> 6

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<400> 50

Tyr Gly Gly Phe Leu Lys
1 5

<210> 51

<211> 6

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> NH2 of Tyr is blocked by butyloxycarbonyl group

<400> 51

Tyr Gly Gly Phe Leu Lys
1 5

<210> 52

<211> 6

<212> PRT

<213> artificial sequence

<220>
<223> Synthetic

<220>

<221> MOD_RES

<222> (1)..(1)

<223> NH2 of Tyr is blocked by butyloxycarbonyl group

<220>

<221> MOD_RES

<222> (6)..(6)

<223> polymer connected to epsilon-amino group

<400> 52

Tyr Gly Gly Phe Leu Lys
1 5